

REMARKS

Claims 4-21 presently appear in this case. No claims have been allowed. The official action of June 1, 2005, has now been carefully studied. Reconsideration and allowance are respectfully urged.

Briefly, the present invention relates to a tip for scanning probe microscopy having attached thereto a transition metal chalcogenide nanotube having a length of greater than 0.5 microns, and a method for the production thereof.

Claim 3 has been rejected under 35 U.S.C. §112, second paragraph, as being indefinite in lacking antecedent basis for "said microfabricated tip."

Claim 3 has now been deleted, thus obviating this rejection.

Claims 1-3 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Dai in view of Homyonfer. The examiner states that it would have been obvious to utilize the transition metal chalcogenide nanotubes produced by the method of Homyonfer in the method of Dai. This rejection is respectfully traversed.

The process of Homyonfer can only make relatively short transition metal chalcogenide nanotubes. Example 2, on page 10, indicates that the oxide nanotubes produced thereby had an average size of only 300 nm (.3 microns). Similarly, Example 14, on page 18, indicates that tungsten oxide whiskers of 300 nm average length was obtained. Example 15 shows the longest length of such whiskers being increased to 500 nm.

Longer nanotubes cannot be produced by the process of Homyonfer.

On the contrary, the transition metal chalcogenide nanotubes of the present invention have a length greater than 0.5 microns and up to 20 microns and more. Note paragraph [0017] on page 5 of the present specification where "short" nanotubes are defined as being shorter than 0.5 microns to distinguish them from longer nanotubes, which are longer than 0.5 microns. The present application is directed only to the longer nanotubes, which are as long as 20 microns or more (see paragraph [0013] on page 4 of the specification), preferably 10-20 microns or more (see paragraph [0010] on page 4 of the present specification). The examples disclose a nanotube with a length of 1 micron at paragraph [0078] on page 27. Accordingly, nanotubes with a minimum length of 1 micron are also supported by the present specification.

Even if it were obvious to use the nanotubes of Homyonfer as the probe tip of Dai, one would not arrive at a tip in accordance with the present invention as the tips in accordance with the present invention are longer than those that can be produced by the process of Homyonfer. Prior to the present invention it was impossible to produce transition metal chalcogenide nanotubes with a length of greater than 0.5 microns, particularly greater than 1 or greater than 10 microns. This is particularly true with respect to the sulfide or selenide compounds.

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Accordingly, the present claims have been greatly simplified to claim a method of preparation that involves only the step of attaching, but requiring the transition metal chalcogenide nanotube that is attached to the tip as being one of the novel nanotubes of the present invention of a length that could never heretofore be obtained. Claims are also submitted directed toward the tips themselves that are made by the process.

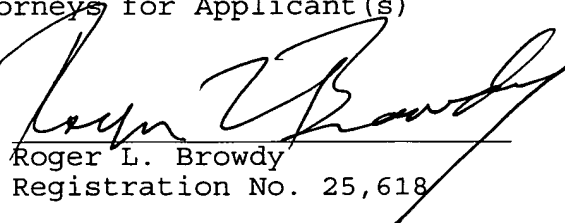
Accordingly, reconsideration and withdrawal of this rejection are respectfully urged.

It is submitted that all of the claims now present in the case clearly define over the references of record and fully comply with 35 U.S.C. §112. Entry of the present amendment and allowance of all the claims now present in the case are, therefore, earnestly solicited.

Respectfully submitted,

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